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A concept analysis of women's vulnerability during pregnancy, birth and the postnatal period.

Abstract

Aim: To report an analysis of the concept of vulnerability associated with pregnancy, birth and the postnatal period.

Background: The concept of vulnerability during childbirth is complex and the term, 'to be vulnerable' frequently attains a vague application. Analysis about vulnerability is needed to guide policy, practice, education and research. Clarity around the concept has the potential to improve outcomes for women.

Design: Concept analysis.

Data sources: Searches were conducted in CINAHL, EMBASE, PubMed, Psychinfo, MEDLINE, MIDIRS and ASSIA and limited to between January 2000 and June 2014. Data were collected over 12 months during 2014.

Methods: This concept analysis drew on Morse's qualitative methods.

Results: Vulnerability during pregnancy, birth and the postnatal period can be defined by three main attributes: a) Threat; b) Barrier; and c) Repair. Key attributes have the potential to influence outcome for women. Inseparable sub-attributes such as mother and baby attachment, the woman's free will and choice added a level of complexity about the concept.

Conclusion: This concept analysis has clarified how the term vulnerability is currently understood and used in relation to pregnancy, birth and the postnatal period. Vulnerability should be viewed as a complex phenomenon rather than a singular concept. A 'vulnerability journey plan' has the potential to identify how reparative interventions may develop the woman's capacity for resilience and influence the degree of vulnerability experienced. Methodology based around complex theory should be explored in future work about vulnerability.

Key words: concept analysis, vulnerability, pregnancy, postnatal, birth, threat, barrier, repair, nurses, midwives, cross-discipline.

SUMMARY STATEMENT

Why is this research or review needed?

- The term vulnerability has become implicit in literature and leads to vague application when associated with pregnancy, birth and the postnatal period.
- Unclear definition in literature leads professionals to form a variety of interpretations about the meaning of vulnerability.
- This concept analysis has the potential to; clarify meaning, inform practice, underpin education, influence research and guide policy.

What are the key findings?

- Three main attributes identified that the presence of a). Threat b). Barrier and c). Reparative processes influenced the outcome for women.
- Rules of relation established that the journey of becoming vulnerable is in constant flux and rests on a course of events that become interlinked which creates complexity.
- Inseparable attributes such as mother and baby attachment, the woman's free will and choice added complexity.

How should the findings be used to influence policy/practice/research/education?

- The woman's journey to becoming vulnerable should be captured in care plans to identify potential threat, barriers and reparative strategies to build resilience.
- The reformed definition from this work should be tested internationally.
- Complex theory should be utilised in future work to explore women's perception of the new definition.

INTRODUCTION

Definitions of vulnerability include being defenceless, exposed, open to attack, sensitive, susceptible, unprotected and weak (McLeod 1985, p. 736), where a position of relative disadvantage is identified (Stevenson 2010). There is increasing interest around vulnerable groups in maternity care (DH 2010a, NHS England 2016). This interest is situated in a climate where fifty-five percent of women in the UK are classified as having high risk at the end of pregnancy (Sandall 2014). In addition, there is an overarching belief that more women will become vulnerable to developing complication during childbirth in future years (DH 2010a). An extreme complication to wellbeing is measured by global maternal death rates. Maternal death has reduced by forty-five percent globally between 1990 and 2013, however, the setting where pregnancy and birth takes place predisposes to wide variation in death rate (WHO 2014a). Therefore, policy makers are led to believe that increased vulnerability to women's wellbeing is dependent on the international context of where an individual lives (WHO 2015a). However, this belief may lead to complacency about the factors that contribute to vulnerability for women.

Background

Looking closely at the concept of vulnerability led to definitions about the uncertainty of life (Jacobs 2014) and where being 'open to circumstance' contributed to becoming vulnerable (Rodgers & Knafel 2000, Purdy 2004). There was acknowledgment that a single element, such as poverty, or natural disaster rendered a person 'vulnerable' (Delor & Hubert 2000, p. 1557). According to Watts & Bohle (1993), it is important to consider three coordinates of vulnerability: 1) exposure to a situation; 2) capacity to cope; and 3) the potential risk of serious consequences, which moves away from reducing the concept to a single cause. In addition, becoming vulnerable can be related to three types of contempt that people are exposed to (Delor & Hubert 2000). For example, being exposed to and becoming defenceless to another's will;

denigrating another's lifestyle and social exclusion. It is understandable from this description of contempt that phrases such as victimization; insecurity and risk have become associated with the concept.

There is a suggestion that specific groups in society are vulnerable and the UK categorises; black and ethnic minority women, those with difficulty communicating, learning disability, migrants, asylum seekers, refugees, gypsies, travellers, drug and alcohol users, homeless people, those sleeping rough or in transient accommodation, sex workers, teenagers or those who lack social support (NHS England 2015, DH 2014, NICE (National Institute for Health and Care Excellence) 2008). Those who live with HIV, are older, who need surgery, have heart disease, are obese or malnourished or who live in poverty contribute to the rhetoric around vulnerability (Ampiah-Bonney 2014, Cousley Martin & Hoy 2014, Brocklehurst & Laurenson 2008, Last 2007, Flaskerud & Winslow 1998). Age, gender and cultural background can be added to the list of vulnerability factors (Rogers 1997, Brocklehurst & Laurenson 2008).

However, at times discourse lacks a focus around pregnancy, birth and the postnatal period and sweeping terms such as, 'provide support', 'reduce inequality' and 'improve provision' (DH 2010a, p. 27) guide health professionals without a clear explanation about how a better outcome can be achieved. Current rhetoric around becoming a mother suggests that susceptibility to poor mental health (Ross *et al.* 2004, Semyr *et al.* 2013), predisposing personal characteristics (Dijkstra & Barelds 2009) or exposure to life events increases vulnerability (Fergusson & Horwood 1987). Furthermore, it is recognised that the context of the family, community and society creates an 'interplay' resulting in an individual being vulnerable or invulnerable (Dorsen 2010, p. 2825). This interplay can be interpreted from multiple perspectives, such as professional, institutional, social, expert or lay-person stances (Peterson & Wilkinson 2008). The stance taken influences a considerable debate around how to define vulnerability. For example, how organisations', professions' or individuals' frames 'risk' adds

a layer of complexity (MacKenzie-Bryers & van Teijlingen 2010). Complexity grows when acknowledgement is given to how professionals care, where emotional distance of the professional may be pivotal in rendering the woman vulnerable (Briscoe & Street 2003, Briscoe 2009, Briscoe *et al.* 2015, Morse *et al.* 1990, 1994, Morse & Mitcham 1997).

Greater clarification is needed to help inform how vulnerability can be contextualised in relation to maternal wellbeing. To avoid theoretical and conceptual ambiguity a clear and comprehensive definition of a concept is required (Lee 2015). Concepts are ‘the building blocks of theory’ (Rogers & Knafl 2000, p. 781) and emerge from a mental image about a phenomena that becomes visible through the use of terminology (Portillo & Holzemer 2010). A deeper understanding about a concept enhances the ability of researchers and policy makers to use and apply the concept in different contexts (Morse 2004). In this respect, concept analysis aims to identify, clarify and provide a shared meaning (Rogers & Knafl 2000), which would enhance an improved structured approach to further enquiry (Morse *et al.* 1996a). Lack of structure around a concept hinders reliability, validity and has the potential to create, ‘excessive, antagonistic discourse’ (Morse *et al.* 1996a, p. 254). This paper aims to clarify rhetoric associated with being vulnerable and will help to address the question: ‘What defines the concept of being vulnerable during pregnancy, birth and the postnatal period?’ The overarching intention is to provide a definition which has the potential to inform policy, practice, education and research.

Data sources

A search was limited to between January 2000 and June 2014 and was performed by 2 researchers (LB & LMc) via ASSIA, CINAHL, MIDIRS, EMBASE, PubMed, Psychinfo and MEDLINE, (Booth *et al.* 2012, Petticrew & Roberts 2006, Robinson *et al.* 2011) (Table 1). Data were collected over 12 months during 2014.

The inclusion and exclusion criteria was debated and a consensus reached (LB, LMc and TL) (Table 2). To conduct a rigorous, transparent and relevant search, ‘population’, ‘intervention’ and ‘outcome’ (PIO) utilised Boolean terms, ‘AND’ and ‘OR’ as appropriate. The optional term of ‘comparison’ was omitted (Glasziou 2001, Vaska 2009) as it was believed that ‘comparison’ would not add to relevance in the underpinning qualitative approach (Morse 1995). Search terms were phrased around documented phrases associated with vulnerable populations in maternity care. Papers were classified by title and abstract.

Data selection and analysis

Four hundred and twenty-eight original research papers were read for title and abstract then categorized into discipline and decade in a Microsoft Excel 2010 database (Table 3). Relevance was an important consideration and as Morse (1995) describes, this relies on the researcher’s judgment call. LB selected 40 relevant articles and LMc quality reviewed the selection. The search and selection process resulted in 26 papers for inclusion (see Figure 1: Flow chart). Results from qualitative (n =12); quantitative (n= 13) and 1 mixed method study were analysed following the iterative process identified by Morse (Morse & Mitcham 2002, Morse *et al.* 1996a, 1996b, Morse 1995, 2004).

A process of concept identification, development, delineation, comparison, clarification, correction and refinement was used (Morse *et al.* 1996a, p. 270). Reviewing literature identified that the concept had no accurate description available (concept identification). Concept development involved reading and re-reading articles which revealed there was a lack of definition and detail about characteristics, antecedents and consequences. Concept delineation was formed via sorting the data into categories and sub categories which determined that 3 concepts appeared to be linked as if they were part of the same experience. Concept comparison identified how concepts competed with each other to establish

complexity. Concept clarification recognised that there was a large body of literature providing clinical examples but the concept was measured using various variables and was applied in different ways in research. Concept correction highlighted that application to practice appeared inappropriate at times. Concept refinement established that boundaries developed indicators but the validity across populations has not yet been determined.

Data were extracted using three steps of concept development and involved: a). Identifying attributes; b). Verifying attributes and c) Identifying the manifestations of the concept (Morse 1995, p. 37). Attributes are formed from abstract and universal words such as threat, goal or endurance, may be in various forms and assume various degrees of importance in different situations (Step a). Attributes were then reformulated to explore how each characteristic linked to each other, the flow to links established rules of relation (Verifying attributes: Step b). This process involved searching for indicators of those characteristics in other situations or populations. To identify the manifestation of the concept (Step c), rules of relation were compared in each article to establish variation in the data. In this step, the abstract and universal components of the concept do not need to be manifest identically in each group.

RESULTS

Relevant articles focussed on terminology associated with being vulnerable. However, the findings suggested there was omission of a definition or an ambiguous reference about the word 'vulnerable' (Table 3) in articles. For example, Table 3 identified that 22 out of 26 articles did not present a definition, nine referred to the concept and only 3 provided a definition based on that author's perception. Author's definitions were usually formed around the antecedent; for example, 'vulnerable to postnatal depression' (Murray *et al.* 2003a, p. 131).

Defining attributes

Attributes are characteristics that are repeatedly evidenced (Rew 2005) and can be related to an abstract idea (Morse 1995, 2004) such as ‘knowing’ (Morse *et al.* 1994, p. 236). Morse’s framework (1995) provided a step by step method that generated the building blocks associated with the concept of vulnerability. In Step a. of the analytic process thirteen ‘universal’ and ‘abstract’ themes (Morse 1995, p. 2) were tabulated in a word document. Examples of attributes from each study were filed under each theme. The table was then analysed and overlapping themes were integrated, for example ‘Stigma’ was merged into the sub-theme ‘Barrier’.

Themes were then developed to form the attribute. Analysis of recurrent phrases and words revealed one overarching attribute of, ‘Threat’ and 2 sub attributes, ‘Barrier’ and, ‘Repair’. Identification of ‘Rules of Relation’ (Morse 1995, p. 38) became apparent when elements were placed in a simplified matrix (Miles & Huberman 1994). Searching for indicators of how attributes presented in different situations and populations (Step 3: Morse 1995, p. 28-29) forms part of the discussion in this paper.

Threat

The overarching attribute of threat emerged from a biological, psychological or sociological perspective where elements of each perspective had the potential to overlap. Attributes of ‘Threat’ are explained as a potential for harm which is capable of being, but has not taken place yet (Scholtz 2000) and can be seen from an educational, nursing or psychiatric perspective (Ritchie 2004). Ritchie (2004, p.17) goes on to explain that feeling threatened can be expressed as worry, anxiety, having an altered self-esteem or sensing a loss of dignity leading to negative coping responses. However, there is a belief that threat can be mitigated by reappraisal, self-determination, increased support and increased control (Ritchie, 2004, p.17). In this concept analysis ‘Threat’ to physical health revolved around the extreme of young or

advanced age, chronic disorder, infant illness or disability, maternal infection, first baby, or caesarean section (Table 3). The emerging picture from this analysis supports UK trends of younger women incurring poorer access to care, for example in Murray *et al.* (2003b) and an increased maternal age range from 19-42 years (mean age 34) in the work of Shakespeare *et al.* (2004). An older maternal population with increased complex needs has emerged (National Audit Office 2013) and that finding is replicated internationally, identifying that younger and older maternal age groups may incur increased chance of poorer outcome (Carolan *et al.* 2011, Laopaiboon *et al.* 2015).

Psychological threat was apparent, corroborating the findings from recent public engagement where there is a call to support women better with their perinatal mental health needs (NHS England 2015). Summaries from this analysis identified women's psychological characteristics as anxious, stressed, sensitive, overwhelmed, confused, trapped or with thoughts of suicide (Wilton & Kaufman 2001, Raymond 2006, Edge 2008, Bacchus *et al.* 2003, Gaskin & James 2006). However, it is important to acknowledge that the perception of psychological threat to wellbeing differs between countries (WHO 2014b).

Sociological threat (Table 3) emerged as living with deprivation, low levels of education, low occupational status, having an unstable stable environment, forced marriage, fear of a partner or family honour. Women commented on conditions that reflected societal values and described how family pressure can influence their wellbeing (Baldwin & Griffiths 2009, Christie & Bunting 2011). Understanding how society values maternal wellbeing can be complicated by current political and social drivers. For example, Rescher (2013, p. 136) suggests calculating the value of a life is based on qualitatively driven objectives which determine allocation of funding for health. Therefore, qualitatively driven objectives for maternal wellbeing in the UK identifies that it is important for women to hold their own maternal budget to inform choice (NHS England 2016), while choice for women in Africa is

removed and left to male partners to decide, ‘when, where and if’ maternity care will be accessed (Amzat 2012, p. 284). The qualitatively driven objectives in Africa attempt to support women by promoting contraception in order to reduce imposed pregnancy that comes, ‘too early too frequently and/or too late’ (p. 284).

Barrier

Barriers were created by poor access to health care (Edge 2008), when women withdrew socially or chose not to communicate about the way they felt (Ayers & Pickering 2001, Seneviratne *et al.* 2003, Furber *et al.* 2009). In addition, professionals created barriers via negative professional attitude, their perceptions or their style of engagement. For example, a brisk, judgemental, bossy, discriminative, hostile professional pre-empted a lack of trust, uncertainty and self-doubt in women (Murray *et al.* 2003b, Shakespeare *et al.* 2004, Hall 2006, Durand *et al.* 2010, Turner *et al.* 2010, Kelly *et al.* 2013) led to a negative psychological response in women. A negative psychological response towards the health professional relationship was detrimental to all women especially those who were younger or less well educated.

Degree of vulnerability

The degree of vulnerability was influenced by whether reparative processes were used to support women. Reparative processes were identified when health professionals had received training and education to enhance their professional development, when need was pre-empted and when appropriate support was offered. For example, the implementation of brief interventions for postnatal depression (MacArthur *et al.* 2002, Boath *et al.* 2004, Turner *et al.* 2010), interventions around domestic violence (Bacchus *et al.* 2003) or the provision of

information about amniocentesis (Durand *et al.* 2010) gained significantly improved outcomes when the professional was knowledgeable, confident and competent. When those factors were in place the intervention had the ability to instigate a reparative process for the woman.

It was important to women that their perspective was taken into account when an intervention was implemented (Wilton & Kaufman 2001, Hall 2006). Key to promoting that reparative process was the ability of the health professional to establish a warm, trusting and therapeutic relationship (Wilton & Kaufman 2001, Murray *et al.* 2003a, Seneviratne *et al.* 2003, Morrell *et al.* 2009, Brugha *et al.* 2011). In addition, women valued expertise and knowledge (Shakespeare *et al.* 2004, Kelly *et al.* 2013). When all elements were in place, professional engagement had the ability to raise women's self-esteem. Alongside of engaging with professionals, raised self-esteem was derived from socially empowering supportive relationships with other women who were in a similar situation (Raymond 2006, Perry *et al.* 2008) either face to face or virtually (Raymond 2006).

Complexity

Elements emerged which could not be separated, leading to the parameters of concept areas related to 'Threat', 'Barrier' and 'Repair' becoming blurred. For example, lack of detail in research made it difficult to analyse how a particular woman actually bonded with her baby (Hall 2006), how women's freedom of choice to opt in or out of interventions had the potential to undermine results (Turner *et al.* 2008, Furber *et al.* 2009, Wan *et al.* 2011) or to determine the influence of relationship on the woman and health professional. Complexity was difficult to measure (Wilton & Kaufman 2001, Perry *et al.* 2008, Kelly *et al.* 2013), therefore, it was important for the researchers to have a deeper understanding about how elements related to

each other. Morse (1995) highlighted the importance of verifying attributes in the analytic process by establishing rules of relation ('Step b & c'). Rules of relation are defined as stable patterns of factors, attributes, characteristics or properties (Bolton cited in Morse 1995, p. 35). The process of establishing rules of relation in this research analysed stimulus and subsequent action to interpret the correlation between each attribute ('Threat' 'Barrier' and 'Repair'). It is important to know that attributes did not emerge in that order and the order was understood better by a consideration of correlation.

To understand rules of relation the researchers looked for variation in the data across disciplines, with the understanding that attributes did not need to be manifest identically (Morse 1995). Patterns of attributes were recoded and placed in a linear table. The table was then re-ordered to identify correlation of events that took place when vulnerability had been described. It became apparent that threat emerged as the overarching attribute to vulnerability. There was potential for threat to be reduced, remain the same or escalate and that movement depended on perceived barrier. Analysis moved to an understanding that barrier could be influenced by reparative processes. It was clear that better outcomes for women were generated when women's perceptions were repaired by warm professional relationships (Morrell *et al.* 2009), the type and frequency of listening visits (Wan *et al.* 2011), non-judgmental acceptance (Wilton & Kaufman 2001) and women's increased self-esteem (Brugha *et al.* 2011). Understanding more about how attributes related to each other led to an understanding that the woman was involved in a journey to becoming vulnerable.

This analysis identified that complexity in women's daily lives is often hidden in research. One reason for hidden complexity may be due to a researcher's reductive intent to measure. However, in this concept analysis it was highlighted that it may not be possible to separate complex findings. Therefore, analysis in this research was able to identify a thread between the antecedent, attribute and inseparable conditions (Figure 2).

DISCUSSION

This concept analysis has contributed to the development of middle range descriptive theory in relation to pregnancy, birth and the postnatal period. Middle range theory stands between the highest level of philosophical and the lowest level of empirical ways of describing ideas. A lower range theory would identify what reality meant to the individual which may be generated from the analysis of primary research. Findings generated from primary data may then use the method of concept analysis to build theoretical blocks around emerging concepts. For example, 'Empathy' (Morse *et al.* 1992), or 'Caring' (Morse *et al.* 1990) may be studied in depth to provide conceptual definition, concept identification and help to explain what the concept means (Smith & Liehr 2008). Middle range theory generated from concept analysis may then be explored from a higher perspective to explain the relationship of the knower to the known from an ontological perspective about what constitutes reality in relation to the concept (Denzin & Lincoln 2000). Therefore, the generation of middle range theory in this concept analysis was able to bridge attributes of vulnerability in pregnancy, birth and the postnatal period (Threat, Barrier and Repair) to form a new definition. The bridge was created by an understanding of rules of relation which suggested that a journey had taken place to the woman becoming vulnerable and has led to the revised definition that:

Women are vulnerable when they experience 'threat' from a physical, psychological or social perspective, where 'barriers' and 'reparative' conditions influence level of vulnerability.

In this premise, the journey of becoming vulnerable is in constant flux and rests on a course of events that become interlinked, creating complexity for the woman and those who provide maternity care. According to Morse (1995) it is important to search for indicators of how attributes present in different situations and populations. To support this perspective in

our research, data, accessed across discipline, identified consistent referral to the key attributes which identified how complex the maternal journey may be.

Complexity

Becoming vulnerable during the maternal experience emerges due to the development of a complex system. There is a belief that complexity should be identified by patterns and interrelationships rather than focusing on cause and effect (Health Foundation 2010, NHS England, 2015). A complex system becomes apparent when eight characteristics are present which include; dynamic interaction (1); the influence of other elements (2); small changes having a large effect (3); difficulty in definition (4); existing boundaries (5); control becoming difficult (6); the past shaping present behaviour (7) and (8) elements responding only to what is available or known locally (Health Foundation 2010, p. 8). Complex theory was not used in this research and its usefulness has been better understood following this concept analysis. One example of how complex theory could be applied to this research could be related to Turner *et al.* (2010) who highlighted that verbalising around depression was difficult for women and the element was difficult to define (characteristic 4); when dynamic interactions occurred between women and health professionals (characteristic 1) (Wan *et al.* 2011, Shakespeare *et al.* 2004, Birtwell & Hammond 2013) and small changes such as listening visits made a difference (characteristic 3) (Brugha *et al.* 2011). Associating complex adaptive theory to vulnerability helps to recognise the concept is not linear (Jacobs 2014) and provides a way of viewing dynamic changes in an individual maternal journey. The journey may twist or turn, control of that journey is difficult and is dependent on the interrelationship between care provided and the woman.

Vulnerability as a journey

Zarowsky *et al.* (2013) argued that becoming vulnerable is a process. The process in this research captured the woman's journey. It would be interesting to find out how women, globally, relate to the process of vulnerability identified in our research and if key attributes hold the same importance for all. In that journey, vulnerability has been said to oscillate, enabling women to focus and re-focus on elements such as love, relationships, security and survival (Kaye *et al.* 2014). The idea of oscillation is comparable to a feminist perspective where the tapestry of women's life identifies that:

Each day is a tapestry, threads of broccoli, promotion, couches, children, politics, shopping, building, planting, thinking, interweave in intimate connection with insistent cycles of birth, existence and death (Aptheker 1989, p. 39).

This concept analysis proposes that the journey to becoming vulnerable should identify what threats or barriers exist for the woman and which reparative solutions would develop powers of resilience. Interestingly, there has been importance attached to identifying the starting point of vulnerability (Brockelhurst & Laurenson 2008) which this research agrees with. Suggestions are that new interventions should raise awareness of the individual's situation or focus on reducing stigma (Cousley *et al.* 2014, Ampiah-Bonney 2014). However, there is no specific direction about how to achieve those recommendations. Whereas, this concept analysis recognises that an action plan identifying threats, barriers and reparative elements during the woman's journey would provide a solution focussed approach to wellbeing and may complement a personalised care plan (NHS England 2016).

Resilience

Analysis highlighted that women were exposed to adversity and had an ability to survive and become less vulnerable. The ability to emerge from a vulnerable state has been linked to resilience. For example, bonding between the mother and the baby has been said to

develop resilience to, or to be at risk of, depressive disorder when faced with adverse situations in life (Miranda *et al.* 2012). However, existing rhetoric may depict resilience as a self-sufficient individual who is able to return to the previous state and neglects the influence of relationship (Flynn *et al.* 2012). Seen from a feminist perspective, resilience is appreciated as relational and contextual, not necessarily returning to equilibrium (Flynn *et al.* 2012) but the: ‘product of a complex relationship of inner strengths and outer help throughout a persons’ life span’ (Butler cited in Flynn *et al.* 2012, p. 6). According to Coutu (2002, p. 4) there are 3 characteristics to resilient people, acceptance of reality; a deep belief based on strongly held values and an ability to improvise. Interestingly, Coutu’s suggested characteristics hold resonance with other research based around maternal experience (Bebbington *et al.* 1984, Schmitz *et al.* 1996, Scheper-Hughes, 2008, Higginbottom *et al.* 2013, Kohl *et al.* 2013).

Contradiction in rhetoric

In this concept analysis ambiguity and theoretical variation existed. When ambiguity exists interpretation may be left to individuals, which in turn reflects the variation about how the concept was applied in practice, education or research. It is interesting to consider that the concept of vulnerability in maternity care possibly creates a contradiction to rhetoric where midwives are exposed to theories associated with caring for physically well women who happen to be pregnant (Downe 2004) and are able to choose and control their maternity care (DH 2004, 2007, 2010a, NHS England, 2016). This provides a possible explanation why the term, ‘vulnerable’ may become vague in literature for midwives because the term, ‘vulnerable’ does not necessarily fit with an empowered perspective (DH 2004, 2007, 2010a, NHS England 2016). The challenge for midwives then is to provide a supportive, relational, empowering and contextual, service based around the individual woman’s journey to becoming vulnerable.

Strengths and Limitations

To the best of our knowledge this is the first conceptual analysis about vulnerability related to pregnancy, birth and the postnatal period. The framework to support the analysis was provided by Morse (1995), which is an iterative process, shaped the researcher's perception of relevance and interpretation of the data. In addition, influence has occurred because the researchers are mothers, midwives and a psychologist. Therefore, interpretation may be different if this concept analysis was perceived through an alternative lens. To limit the influence of the researcher (LB), verification was sought from a research team (TL & LMc); the process used reflection and consensus to underpin the final selection and interpretation.

This research has the potential to provide a more specific focus for policy makers, clinicians, academics or researchers based around a belief that the woman will have experienced a journey to becoming vulnerable. The plan of care suggests the need for a solution-focussed approach to increase women's resilience. However, only primary, peer reviewed research, published in English underpinned this analysis. In addition, research was used where vulnerability was situated in a UK setting which spanned a defined period. Therefore, it would be informative to analyse international research related to vulnerability in the future.

Recommendations

Policy makers need to understand that women become vulnerable due to a complex set of issues. Therefore, future service planning should include provision based around a matrix approach and not individual service points. A matrix of service provision will need to consider how defined fiscal and geographical boundary divisions influence outcomes for vulnerable women during their maternity care.

It would be interesting for researchers to explore with women how reparative interventions help to build resilience and influence degree of vulnerability, at which stage in the process an intervention should occur and how long the intervention should continue.

This work did not use complex adaptive theory but has highlighted that to capture complexity in women's lives, complex adaptive theory should underpin a methodological research approach in the future. That theory provides an approach that recognises complexity, patterns and interrelationships rather than focusing on cause and effect.

Future research to expand the definition should include an ethical, moral or spiritual perspective. Furthermore, there should be an exploration about the use of rhetoric around empowerment, vulnerability and resilience in maternity care.

In practice, documentation should be designed to facilitate the development of an appropriate action plan that is able to make the woman's journey to becoming vulnerable more visible. Health professionals may need education around how to create appropriate and beneficial journey plans that would empower women. The tool should be designed around elements that the woman feels is important. Validation and evaluation of the tool would be appropriate.

Educationalists should widen their perspectives around vulnerability in maternity care to build the competencies of students and qualified practitioners. Specific education should be focussed around building compassionate, warm relationships that are non-judgmental and culturally sensitive.

CONCLUSION

This novel conceptual analysis highlights the complexity of women's experience during pregnancy, birth and the postnatal period. It was evident that biological, psychological or sociological circumstances contributed to women's journey to becoming vulnerable. When women entered pregnancy, labour or the postnatal period in an already vulnerable state, the

presence of 'Threat' and 'Barrier' increased the chance of poorer outcome especially if reparative strategies had not been part of that woman's journey. The presence or absence of those three key attributes influenced the degree of vulnerability. Parameters in attributes were not clearly defined and overlapped, forming a complex matrix of issues which became inseparable at times. The new conceptual model has the potential to capture the woman's journey via an action plan. It is intended that tools developed to assist with journey planning will be informed by this research.

Author contributions

All authors have agreed on the final version. There has been substantial contributions to conception and design (LB, TL, LMC) and acquisition of data (LB). Analysis and interpretation of data, drafting the article and revising it critically for important intellectual content was undertaken by all authors (LB, TL, LMc).

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